

5 membrane potential and an action potential for the desired population of neurons, and
6 wherein the electrical potential is provided at a frequency of approximately 40-200 Hz.

1 70. The method of claim 64 wherein applying an electrical
2 stimulation comprises providing an electrical potential between the first and second
3 electrodes that increases the resting membrane potential of a desired population of
4 neurons at the stimulation site by 60%-80% of a voltage gap between the resting
5 membrane potential and an action potential for the desired population of neurons, and
6 wherein the electrical potential is provided at a frequency of approximately 40-200 Hz
7 and a pulse width of approximately 20-100 μ s.

1 71. An apparatus for applying electrical stimulation to a region of a
2 brain of a patient, comprising:

3 an implantable support member configured to be implanted into the
4 patient at least partially within the skull of the patient;

5 a pulse system carried by the support member;

6 a first electrode carried by the support member, the first electrode being
7 coupled to the pulse system; and

8 a second electrode carried by the support member, the second electrode
9 being spaced apart from the first electrode, and the second electrode being coupled to
10 the pulse system.

1 72. The apparatus of claim 71 wherein the support member comprises
2 an attachment element and a housing carried by the attachment element, the attachment
3 element being attachable to the skull, and the housing carrying the first and second
4 electrodes.

1 73. The apparatus of claim 72 wherein the attachment element
2 comprises a mesh.

1 74. The apparatus of claim 72 wherein the attachment element
2 comprises a plate.

1 75. The apparatus of claim 71 wherein the support member comprises
2 an attachment element and a housing, the attachment element being a mesh, and the
3 housing having a proximal side attached to the attachment element, a distal side to
4 which the first and second electrodes are attached, and a cavity in which the pulse
5 system is housed.

1 76. The apparatus of claim 71 wherein the support member comprises
2 an attachment element for attachment to the skull and a housing configured to be
3 implanted in a hole in the skull, the housing having a proximal side attached to the
4 attachment element, a distal side to which the first and second electrodes are attached,
5 and a cavity in which the pulse system is housed, and wherein the housing has a depth
6 of approximately 1-2 cm.

1 77. The apparatus of claim 71 wherein the support member comprises
2 a compressible member configured to be positioned between the skull and the dura
3 mater or pial surface of the brain.

1 78. The apparatus of claim 71 wherein:
2 the support member comprises a housing configured to be implanted at
3 least partially within the skull, the housing having a cavity; and
4 the pulse system comprises a power supply and a pulse generator within
5 the cavity of the housing.

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1 79. The apparatus of claim 71 wherein:
2 the support member comprises a housing configured to be implanted at
3 least partially within the skull, the housing having a cavity; and
4 the pulse system comprises a pulse generator within the cavity of the
5 housing.

1 80. The apparatus of claim 71 wherein:
2 the support member comprises a housing configured to be implanted at
3 least partially within the skull, and the housing has a cavity; and
4 the pulse system comprises a pulse delivery system within the cavity of
5 the housing, the pulse delivery system having a receiver for receiving a pulse of
6 broadcast energy generated by an external pulse generator and a pulse former for
7 converting the broadcast energy into an electrical pulse within the support member.

1 81. The apparatus of claim 71 wherein:
2 the support member comprises a housing configured to be implanted at
3 least partially within the skull, and the housing has a cavity;
4 the pulse system comprises a pulse delivery system within the cavity of
5 the housing, the pulse delivery system having a magnetic pickup coil for receiving a
6 pulse of magnetic energy generated by an external pulse generator; and
7 the first and second electrodes are electrically coupled to the pulse
8 system within the housing.

1 82. The apparatus of claim 71 wherein:
2 the support member comprises a housing configured to be implanted at
3 least partially within the skull, and the housing has a cavity;